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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/111,482 07/08/98 KIGUCHI H 101111

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EXAMINER

YAMNITZKY, M

ART UNIT	PAPER NUMBER
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1774

14

DATE MAILED:

09/26/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/111,482

Applicant(s)
Hiroshi KIGUCHI et al.

Examiner
M. Yamnitzky

Group Art Unit
1774

☒ Responsive to communication(s) filed on Jul 13, 2000

☒ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three (3) month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1, 2, and 4-31 is/are pending in the application.

Of the above, claim(s) 18-31 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 2, and 4-17 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on Jul 13, 2000 is ☐ approved ☒ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). /0

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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1. This Office action is in response to applicants' amendment filed 07/13/00 (Paper No. 12) which adds Figures 1-5, amends the specification, cancels claim 3 and amends claims 1, 4, 5, 13 and 15.

Claims 1, 2 and 4-31 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. The rejection under 35 U.S.C. 112, second paragraph, as set forth in Paper No. 9, is overcome in part by applicants' amendment. Remaining issues are restated in this Office action. With respect to the issue of the scope of "the luminescence characteristic" as had been recited in claim 1, the examiner withdraws the rejection in view of applicants' amendment changing "the" to --a-- and the cancellation of claim 3. The examiner will interpret "a luminescence characteristic" as encompassing any one of various luminescence characteristics known in the art of EL devices (e.g. color of emitted light, intensity of emitted light, turn-on voltage, device half-life, etc.).

3. Claims 18-31 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed telephonically and in Paper No. 12.

The traversal is on the ground(s) that the examiner has failed to establish that a serious burden on the examiner exists if restriction is not required between the two Groups. Applicants

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argue that "it is highly likely that the results of a search of the claims of Group I would produce references that disclose both specific compositions for EL elements and specific methods for manufacturing EL elements that contain such compositions". This is not found persuasive because while a search of the claimed composition (Group I) may find references disclosing a method for manufacturing EL elements that contain such compositions, there are many methods of manufacturing EL elements that do not require discharging a composition from a head by an ink-jet method (a requirement of the method of Group II). The search necessary to determine the patentability of Group II is not the same as the search necessary to determine the patentability of Group I, thus imposing a serious burden on the examiner if restriction is not required. The examiner also notes that because of the amendment made to claim 1 in Paper No. 12, the method of Group II does not require the use of a composition as claimed in Group I. The claimed method is not limited to the use of a composition in which the dye is not bonded with the precursor polymer. Unless applicants are admitting on the record that any method of manufacturing EL elements using the composition of Group I anticipates or renders obvious an ink-jet method of manufacturing EL elements as claimed in Group II, the restriction requirement is still deemed proper and is therefore made FINAL.

4. The amendment filed 07/13/00 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the

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original disclosure is as follows: New Figures 3 and 4. With respect to new Figure 3, the disclosure, as originally filed, makes no mention of reference numeral "31" or the layers indicated by reference numeral "31". With respect to new Figure 4, there is insufficient description in the original disclosure to support the specific curves shown in Figure 4.

Applicant is required to cancel the new matter in the reply to this Office action.

5. Claims 1, 2 and 4-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 has been amended to limit the at least one fluorescent dye in the composition to a dye that "is not bonded with the precursor polymer". Applicants have not indicated where support is found in the original disclosure for this limitation, and the examiner does not find support in the original disclosure for this limitation.

Any negative limitation or exclusionary proviso must have basis in the original disclosure. See *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff'd mem.*, 738F.2d 453 (Fed. Cir. 1984). The mere absence of a positive limitation is not basis for an exclusion. In the present case, there is no basis for excluding a fluorescent dye that is bonded with a precursor polymer.

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Claim 15 now sets forth a range of “30 to 70 degrees” for the contact angle. The range in claim 15 was originally “30 to 170 degrees”. Support in the original disclosure for the new upper limit of “70” is not clear.

6. Claims 6, 14 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6: There is no antecedent basis for “the polyallylene vinylene precursor”. The use of the term “polyallylene” in claim 6 is also not consistent with the specific polymer (polypara-phenylene) required by claim 6.

Claim 14: The “for preventing” phrase of claim 14 is confusing. In view of the specification, the composition is ultimately dried and solidified in order to make a luminescent layer. The language of claim 14 appears to require a component that would prevent the composition from being dried and solidified to form a luminescent layer.

Claim 15: The limitations imposed on the claimed composition by the contact angle requirement set forth in claim 15 are not clear. Unless all water repellant treatments will provide identical surface properties to the nozzle surface of the nozzle, the contact angle will change from one treated ink-jet nozzle to another, and is not a function/property of the claimed composition *per se*.

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7. Applicants' arguments filed 07/13/00 regarding the rejection of claim 14 under 35 U.S.C. 112, second paragraph have been fully considered but they are not persuasive.

Applicants argue that claim 14 is clearly written and appropriately supported by the disclosure on page 15 of the specification. The examiner disagrees noting that page 15 refers to prevention of drying and solidification at an ink-jet nozzle hole whereas claim 14 does not limit when/where the composition is prevented from drying and solidifying.

8. Claims 1, 2, 4-6 and 12 stand rejected under 35 U.S.C. 102(e) as being anticipated by Shi (5,665,857) for reasons of record in Paper No. 9.

9. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi (5,665,857) for the reasons of record in Paper No. 9, as evidenced by applicants' admissions in the present specification, Yamamoto et al. (5,540,999), and Mori et al. (5,281,489).

All of the fluorescent dyes of claims 7-11 are known as evidenced by applicants' admission and the patents to Yamamoto et al. and Mori et al. In discussing background art in the present specification, applicants admit that distyrylbiphenyl (the dye required by present claim 8) is an example of a fluorescent dye used in conventional EL devices (see the second full paragraph on page 2 of the specification). Yamamoto et al. disclose coumarin, tetraphenylbutadiene, and quinacridone (the dyes required by present claims 9, 10 and 11, respectively) as organic fluorescent substances for use in the light emitting layer of an EL device (see the paragraph

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bridging columns 11 and 12 of the Yamamoto patent). Mori et al. disclose numerous fluorescent materials for use in the light emitting layer of an EL device, including rhodamine dyes and coumarin dyes (the dyes required by present claims 7 and 9, respectively; see column 23, line 48 to c. 25, l. 6, especially c. 24, l. 3-36 of the Mori patent).

As is known in the art, different dyes provide different light emission characteristics (such as different colors). This is admitted by applicants in the paragraph bridging pages 1 and 2 of the present specification.

10. Claims 13, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi (5,665,857) for the reasons of record in Paper No. 9.

11. Applicants' arguments filed 07/13/00 regarding the rejections based on the Shi patent have been fully considered but they are not persuasive.

Regarding the rejection under 35 U.S.C. 102(e), applicants argue that Shi does not disclose, teach or suggest a composition in which a fluorescent dye is not chemically bonded with a precursor polymer as claimed. The examiner respectfully disagrees because, as described by Shi, the fluorescent dye and precursor of a conjugated organic polymer are allowed to react in a methanol solution. Accordingly, prior to any reaction between the dye and the precursor, the composition meets the limitations of the present claims because the dye is not bonded with the

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precursor. Further, until the reaction is complete, the composition of Shi will contain at least some quantity of fluorescent dye that is not bonded with the precursor.

Regarding the rejection under 35 U.S.C. 103(a), applicants argue that the rejection is improper because it is based upon unspecified and uncited art. The examiner takes this statement as a challenge of her statement in the rejection that the dyes of claims 7-11 are known and that it is known in the art that different dyes provide different light emission characteristics. In support of the examiner's statements of what is known, the examiner has cited additional references, including applicants' own admission, as evidence of what is known. These additional references do not result in a new issue and do not preclude this action from being made final. See MPEP 2144.03.

Applicants argue that it is necessary for the dye to have bonding parts for chemically bonding the precursor polymer with the fluorescent dye. Applicants argue that the method of Shi is limited to specific cases where such bonding parts can be formed. The examiner notes that while the present claims require a dye that is not bonded with the precursor, the claims do not exclude dyes that are capable of bonding with the precursor. Claims 7-11 require specific dyes or dye "derivatives". These dye "derivatives" do not exclude dyes having bonding parts capable of forming a bond with a polymer precursor.

Applicants further argue that even if synthesis (of a dye having bonding parts) is successful, Shi requires synthesizing steps not required in the claimed invention. This argument is not persuasive because the rejected claims are drawn to a composition, not to a method.

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Applicants further argue that the claimed composition can be used in an ink-jet method and can be improved by adding a wetting agent to the composition. These arguments are not persuasive because the claims rejected using the Shi patent are drawn to a composition, not to an ink-jet method, and do not require a wetting agent. Only present claim 14 requires a wetting agent. Claim 14 was not, and is not, rejected as unpatentable over the Shi patent.

12. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. This application contains claims 18-31 drawn to an invention nonelected with traverse in Paper No. 12. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

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14. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner can generally be reached at this number from 6:45 a.m. to 3:15 p.m. Monday-Friday.

The current fax numbers for Art Unit 1774 are (703) 305-3599 for official after final faxes and (703) 305-5408 for all other official faxes. (Unofficial faxes for Art Unit 1774 can be sent to (703) 305-5436.)

MRY
09/25/00



MARIE YAMNITZKY
PRIMARY EXAMINER

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